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U. S. DEPARTMENT OF AGRICULTURE.
DIVISION OF BOTANY.
BULLETIN No. 14.

ILEX CASSINE,

THE ABORIGINAL NORTH AMERICAN TEA.

ITS HISTORY, DISTRIBUTION, AND USE AMONG THE
NATIVE NORTH AMERICAN INDIANS.

BY

E. M. HALE, M. D.

PUBLISHED BY AUTHORITY OF THE SECRETARY OF AGRICULTURE.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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LETTER OF TRANSMITTAL.

SEPTEMBER, 1891.

SIR: I have the honor of presenting for publication the accompanying paper on the history, distribution, and uses of *Ilex cassine*, commonly called youpon, a shrub belonging to the southern and southeastern parts of the United States. Dr. E. M. Hale, the author, has made a thorough examination of the scattered information which is to be found on the subject.

In my opinion it is well to publish this paper, in order to perpetuate in a concise form the recorded facts concerning the economic and ceremonial uses of this plant among the North American Indians. The leaves are now used to a limited extent among the Southern people, and possibly their use may be somewhat extended.

It seems that the detection of caffeine in the leaves of this *Ilex* rests upon the chemical analysis of Professor Venable, of the University of North Carolina. I am not aware that any analysis has been made by others.

GEO. VASEY,
Botanist.

Hon. J. M. RUSK,
Secretary of Agriculture.

PREFACE.

Several years ago, when reading that delightful narrative, by the younger Bartram, relating to his travels in Florida, I was much interested in his mention of the *Ilex cassine*, and the decoction made from it, called the "black drink," in use among the Creeks and other aborigines of the Atlantic and Gulf coasts. My curiosity led me to investigate the subject, and I was surprised to find so little written about it. I have consulted all the works in which there are any allusions to the *Ilex cassine*, and the results of this research are embodied in this bulletin.

I must acknowledge the kind assistance and encouragement of many eminent men; among whom are Dr. George Vasey, Dr. A. W. Chapman, Albert S. Gatschet, Dr. Daniel G. Brinton, Horatio Hale, and Prof. F. P. Venable.

I hope this imperfect paper may stimulate others to further investigations of this indigenous analogue of tea and coffee.

EDWIN M. HALE, M. D.

No. 2200 *Prairie Avenue, Chicago, Ill.*

ILEX CASSINE, THE ABORIGINAL NORTH AMERICAN TEA.

EDWIN M. HALE, M. D., *Chicago.*

There is a shrub or small tree, a species of holly (*Ilex cassine*), growing in the Southern States along the seacoast, not extending inland more than 20 or 30 miles, from Virginia to the Rio Grande. Its leaves and tender branches were once used by the aboriginal tribes of the United States in the same manner as the Chinese use tea and the South Americans use maté. But while the use of *Thea sinensis* and *Ilex paraguayensis* still survives, the use of the shrub above mentioned has been almost abandoned by our native Indians and by the white people who once partially adopted it as a beverage.

The reason for its disuse is hard to discover, for, in common with the tea and maté, it contains caffeine, or a similar alkaloid. The object of this paper is to examine its history, to suggest its restoration to a place among the stimulant beverages, and inquire into its possible economic value.

I have been able to trace its use as a beverage back to the legendary migration of the Creeks from their supposed far western home to the seacoast of the Carolinas. Whether it was used by the prehistoric mound-builders is a question which may not at present be solved. But some archæologist of the future may find in the remains of the mound-builders or their predecessors proof of its use among them.*

BOTANY OF CASSINE.

Before tracing the history of the cassine from the earliest historic period down to the present, a few botanical notes relating to the genus *Ilex* are appropriate. According to Bentham and Hooker in their "Genera Plantarum," this genus contains about 145 species, mostly natives of Central and South America, but some belonging to the southern portions of North America; others to the central and tropical parts of the Eastern Hemisphere; and a few to Africa and Australia.†

The question whether any other species than the *I. cassine* contains an alkaloid analogous to caffeine has not been investigated. It is also a question whether any of the allied species, such as those of the sections *Prinoides* and *Prinos*, contain a constituent which would enable

* This was written before Professor Venable's recent investigations, hereafter referred to.

† Prof. W. Trelease, of the Shaw School of Botany, St. Louis, Mo., has written an excellent synopsis of the genus *Ilex* in the United States embracing 14 species.

them to be a substitute for the cassine.* Chapman, in his "Botany of the Southern States," enumerates three principal species of the genus *Ilex*, and one variety, namely, *Ilex opaca* (common holly), *Ilex dahoon* (dahoon holly), and *Ilex cassine*, sometimes called "*Ilex vomitoria*." The one variety is the *Ilex myrtifolia* (myrtle-leaved holly). He mentions three species of the section *Prinoides* and four of *Prinos*. The habitat of all the species, except the *I. cassine*, extends from the seacoast inland in swamps, along river courses, and low pine lands. In fact, no mention is made of their occupying the light sandy soil close to the seacoast.

Rev. E. C. Reinke writes from Fairfield, Island of Jamaica, that there are four species of *Ilex* on the island, viz, *I. obcordata*, *I. occidentalis*, *I. diæca*, *I. montana*. Most of these are found on the Blue Mountains, 5,000 feet above the level of the sea. He could not ascertain that any use whatever was made of the leaves or berries either on the island or anywhere in the West Indies. As the aborigines of the West India Islands are all extinct, or nearly so, it is not strange that no present use is made of the *Ilex*. It is probable that none of these species contains any such active constituents as the *I. cassine*.

Dr. Chapman, in a recent letter, says: "The *I. cassine* grows along the whole east and west coast of Florida, and on the shores of the Gulf and in Texas, if the *Orcophiles* (Scheele) is the same, as is possible."

John M. Coulter (Contributions U. S. National Herbarium, vol. II, No. 1, Texas) mentions that the *Ilex cassine* yaupon "extends into Texas to the valley of the Colorado." This would imply that it is not found farther westward than the mouth of the Colorado River, which is at Matagorda Bay, about half way from the Louisiana line to the Rio Grande.

In a recent pamphlet on the extinct coast Indians of Texas, the *Karankawas*, Gatschet mentions their use of the cassine. They gathered it "in the woods, not on the coast line," but probably not beyond the tide water of the rivers. These Indians lived on the coast from the Colorado River to the Rio Grande, so it must be found as far as the latter river. Possibly its habitat extends down along the Mexican coast.

P. M. Hale, in his "Woods of North Carolina," describes several species of holly. Of *Ilex cassine* he writes as follows:

Yupon (*I. Cassine* Linn.).—An elegant shrub, 10 to 15 feet high, but sometimes rising into a small tree of 20 to 25 feet. Its native place is near to salt water, and it is found from Virginia southward, but never far in the interior. Its dark evergreen leaves and bright red berries make it very ornamental in yards and shrubberies. The leaves are small, $\frac{3}{4}$ to 1 inch long, very smooth, and evenly scalloped on the edges, with small rounded teeth. In some sections of the lower district, especially in the region of the Dismal Swamp, these are annually dried and used for tea, which is, however, oppressively sudorific—at least, to one not accustomed to it. The maté, or Paraguay tea, of South America, is of the same genus as this, but a very different species. Our yupon is the article from which the famous black drink of the Southern Indians was made. "At a certain time of the year they come down in droves from a distance of some hundred miles to the coast for the leaves of this tree. They make a fire on the ground, and putting a great kettle of water on it, they throw in a large quantity of these leaves, and, seating themselves around the fire, from a bowl that holds about a pint they begin drinking large draughts, which in a short time occasion them to vomit freely and easily. Thus they continue drinking and vomiting for the space of 2 or 3 days, until they have sufficiently cleansed themselves; and then, every one taking a bundle of the tree, they all retire to their habitations."

* This was written before Professor Venable's recent investigations, hereafter referred to.

ETYMOLOGY OF THE NAMES "DAHOON," "CASSINE," AND "YOUNPON."

I have been at some pains to ascertain the correct etymology of these names.

Dr. Albert S. Gatschet, of the Bureau of Ethnology, at Washington, D. C., one of the best authorities, writes me as follows:

According to Lawson there are two or three sorts of youpon. The Indians of South Carolina call it "cassina." It grows on sand banks and islands near the sea. (Used by the North Carolina Indians for tea.) It is written *cassena*. From Muttet it would appear that the cassine are chiefly African plants, nor do I think that the name is Indian. I find no word in Katawba corresponding to the word "dahoon." I saw here in the Botanical Garden a shrub from North Carolina called *Ilex vomitoria*, undoubtedly the *Assi shrub*. "Assi" is only an abbreviation of *Assi lupub'ski* (Creek), "small leaves." The Shetminasha term was *no'ut* (Ch. C. Jones). Tomochichi calls it "foskey," probably Yamassi, a dialect of the Creek.

W. R. Gerard, of New York, an eminent philologist, writes me:

The word *cassine* belongs to the language of the now extinct Timucua Indians of Florida. Little is known of the language of those people. It has seemed to me that they borrowed the word from the Creeks, who call *Ilex cassine* *ussie*, leaf tea. Cassine (c-assi-ne) would seem to be this word with a guttural prefix and a suffix *ne* of unknown meaning. I can not refer the word *dahoon* to any Indian language. I believe it to be of French origin, "*houx d'Ahon*." *Youpon* is Indian, and seems to belong to the language of the long-extinct Waccoons of North Carolina. The word is Catawba, for in Catawba *yap*, also pronounced "yop," means wood, stick, and tree.

Prof. Lester F. Ward, botanist of the U. S. National Museum, writes:

Linné first used "cassine" as a generic name, and applied it to a South African plant (Gen. Ed. Nova: No. 371, 1753, and his *Systema Naturæ*, ed. 13th, Lipsiæ, 1791). Thomas Walter used it first as a specific name for *Ilex* (Flor. Carolina, Lond., 1778). None of these two refer to the origin of the word. Thomas Walter used dahoon as a specific name; Linné copied from him and spells it "duhoon."

Probably Gerard's explanation of the etymology of those three words is correct, for at the time Walter and Linné wrote the Indian names of plants had been carried abroad by botanists and travelers in this country.

CHEMISTRY OF CASSINE.

ANALYSIS OF THE LEAVES OF ILEX CASSINE.

I quote the following from a paper by F. P. Venable, PH. D., University of North Carolina:

Having on hand a small sample of the leaves procured from New Berne during the winter of 1883, it seemed desirable to make an examination of them, to decide, if possible, the presence of any alkaloid or other principle which would make the decoction useful as a beverage. The usual treatment with magnesium oxide, exhaustion with water, separation by means of chloroform, and subsequent purification was adhered to, resulting in obtaining a small amount of a white substance slightly soluble in water, more so in alcohol, and easily soluble in chloroform, which gave distinctly the tests for caffeine, especially the murexide reaction, and very closely resembled a specimen of pure caffeine from Powers & Weightman.

This caffeine formed 32 per cent of the dried leaves. Later on, in May, a much larger supply of the same leaves was gotten from the neighborhood of Wilmington. A more thorough examination of them was then made, with the following results:

Water in air-dried samples	13. 19
Extracted by water	26. 55
Tannin	7. 39
Caffeine 27
Nitrogen (on combustion) 73
Ash	5. 75

Maté or Brazilian holly (*Ilex paraguayensis*) belongs to the same genus. Its ash analysis, as made by Señor Arat, is given in the second column. The plant grows wild in Brazil, and is very largely used by the South Americans. It has, according to Peckolt (Pharm. J. Trans. (3) 14, 121-124; Abstract Jour. Chem. Soc., 1884, 479), been planted, and seems to succeed well, in the Cape of Good Hope, Spain, and Portugal. It is stated that six different species of *Ilex* are used in the preparation of this tea. Peckolt gives, in his analysis of the air-dried leaves, the percentage of caffeine as 0.639. The average percentage of analyses by different authors is about 1.3. I can find mention of only one other *Ilex* used as a substitute for tea. The analysis of this by Ryland and Brown is quoted in Blythe's "Composition and Analysis of Foods" (p. 343). It is called the *Ilex cassiva*, is said to be used as a tea in Virginia, and the percentage of caffeine is given as 0.12. This is probably the same thing as the yopon, the analysis of which is given above, and the "cassiva" may be a misprint for "cassine."

In a more recent paper Professor Venable reports additional analyses, which are interesting. He says:

Some years ago an analysis of the leaves of *Ilex cassine* was given in this journal.* In this analysis appeared the interesting fact that these leaves contained a small percentage of caffeine. During the winter of 1885-'86, at the request of some medical friends whose attention was drawn to the analysis, a more thorough examination was undertaken, not only of the leaves, but of the berries. It was thought advisable, at the same time, to examine the leaves and fruit of other representatives of the *Ilex* family in this State—*Ilex opaca* and *Ilex dahoon*. This was primarily a search after alkaloids, and not intended as a complete chemical examination. As no alkaloids were found other than the caffeine already mentioned, no account of the work was published, and the results have been hidden away in my note books ever since. Thinking, however, that even negative results are often of some value and that the partial analysis might be of aid to others, I offer this paper for publication in the journal of the society.

Besides the *I. opaca*, *I. dahoon*, *I. cassine*, according to Curtis there are in this State five additional species of this genus: *I. decidua* Walt. *I. ambigua* Chapm; *I. verticillata* Gray, *I. glabra* Gray, *I. coriacea* Chapm, but the examination was not extended to them. In searching for the alkaloids the directions of Dragendorff were first followed. The leaves (or crushed berries) were first digested at 40°-50° with dilute sulphuric acid. This extract was evaporated to a sirupy consistence, the residue mixed with three or four times its bulk of alcohol, filtered after 24 hours' standing, and washed with alcohol. The alcohol was then distilled off from the filtrate, the watery residue was diluted with water and filtered. Petroleum-ether, benzol, and chloroform were successively used to extract the alkaloidal principles, if any were present in the acid liquid. Then, after rendering alkaline with ammonia, the liquid was again extracted with the solvents mentioned.

As, even with water but slightly acidified with sulphuric acid, some risk of the destruction or change of the alkaloids was run during the long evaporation, a second method was made use of, as follows:

The leaves were digested for 10 hours with 70 per cent alcohol, the alcohol distilled off, and the residue treated with lead acetate and soda. The excess of lead was removed by means of sulphuretted hydrogen and the filtrate from this evaporated to a thin sirup. This was then treated with strong alcohol, filtered, and the excess of alcohol distilled off. Bismuth, potassium-iodide, and sulphuric acid were next used to precipitate any alkaloid present. The presence of albuminoid matter rendered it necessary to decompose this by means of soda, neutralized with dilute sulphuric acid, and reprecipitate with mercuric chloride. The solutions to which mercuric chloride had been added were allowed to stand several days. The results may be tabulated as follows:

<i>I. opaca</i> , leaves.....	No alkaloid.
<i>I. opaca</i> , berries.....	No alkaloid.
<i>I. dahoon</i> , leaves.....	No alkaloid.
<i>I. dahoon</i> , berries.....	No alkaloid.
<i>I. cassine</i> , leaves.....	Caffeine.
<i>I. cassine</i> , berries.....	No alkaloid.

I regard these analyses as conclusive, at least, of the absence of the known, well characterized alkaloids. It is, of course, possible that other methods might reveal the presence of some of the more elusive ones.

It is interesting to note in this connection that of the five species in the genus *Thea*, only one contains *theine*; of the genus *Cinchonacea*, to

* Vol. II, p. 39, "Elisha Mitchell Scientific Society."

which coffee belongs, only one contains *caffeine*; while of the many species of *Ilex* in South America, only three, so far as known, contain caffeine. Chemists assert that theine and caffeine are identical, but physicians know that they differ widely in their physiological and therapeutic effects.

PHYSIOLOGICAL AND TOXIC EFFECTS.

All of the hollies possess decided physiological action on the human system. *Ilex opaca* once had a large reputation in Europe and England in rheumatism, gout, cutaneous diseases, and intermittent fever. The young leaves and branches, in France, are fed to cattle, and said to increase the quantity and quality of the milk of cows.

Griffith (Medical Botany, 1847) writes of the *cassine*:

Another native species, the *I. vomitoria*, of Aiton, appears to be endowed with still more powerful properties. This is a native of the most southern parts of the country, where it is held in high esteem amongst the Indians, who considered it a holy plant, and employed it in their religious ceremonies and councils, to purge their bodies from all impurities. They called both this and the *I. dahoon* by the name of "cassena." The leaves, which were the part employed, were collected with great care, and formed an article of trade among the tribes. Dr. B. S. Barton ("Collections," 38) says of it: "It is thought to be one of the most powerful diuretics hitherto discovered. It is held in great esteem among the Southern Indians; they toast the leaves and make a decoction of them. It is the men alone that are permitted to drink this decoction, which is called 'black drink.'" These leaves are inodorous, and have a somewhat aromatic, acrid taste. In small doses the decoction acts as a powerful diuretic, and in large ones produces discharges from the stomach, bowels, and bladder. In North Carolina, on the seacoast, the inhabitants modify the deleterious action of their brackish water by boiling a few leaves of cassena with it. (The African kola nut, powdered and added to foul water, is said to purify it. It contains theobromine, an alkaloid analogous to caffeine.)

Rafinesque (Medical Botany, 1828) calls it "*Cassine Peragua*" (Schoeph), or *Ilex vomitoria* (Aiton), and says:

This by some is said to be the true cassine of the Florida tribes. But *C. aumlosa* (Rafinesque), *Ilex cassine*, and *dahoon*, *Viburnum cassinoides*, are all equally so named and used. The leaves are bitterish, sudorific, purgative, and diuretic; vomitive and purgative in strong decoctions, called "black drink." Said to be useful in gravel, nephritis, diabetes, fevers, and small-pox.

King (Dispensatory, 1864) says: "The *Ilex vomitoria*, or 'South Sea tea,' is the cassine of the Indians. A few leaves of this plant lessen the injurious influence of saline water."

It has never been made officinal in any pharmacopœia in this country or Europe.

METHOD OF PREPARATION.

The leaves and young tender branches were carefully picked. The fresh cassine was gathered at the time of harvest or maturity of the fruits, which was their New Year. The New Year began with the "buck," which was celebrated in July or August, "at the beginning of the first new moon in which their corn became full eared," says Adair. The leaves were dried in the sun or shade and afterwards roasted. The process seems to have been similar to that adopted for tea and coffee. The roasting was done in ovens, remains of which are found in the Cherokee region; or in large shallow pots or pans of earthenware, such as the Indian tribes made.

These roasted leaves were kept in baskets in a dry place until needed for use. Loudonniere (1564) writes of being presented with baskets filled with leaves of the cassine. A description of the method of making the

decoction, or "black drink," will be found in Dickenson's and Bartram's narrations, and in other quotations below. A special feature was the practice of pouring the liquid from one bowl to another until a deep froth appeared. Whether this was supposed to increase the potency of the beverage, or was a fashion, like the Spanish method of whipping chocolate to a foam, is a question; probably the latter is the true explanation. The Japanese treat their infusions of tea in the same manner.

Was it an article of commerce?—There seems to be no doubt on this subject. Allusions to the drinking of the "black drink" are found, indicating its use among tribes residing at a long distance from the habitat of the cassine.

Lawson (1709) writes of its being "collected by the savages of the coast of Carolina, and from them sent to the westward Indians and sold at a considerable price." Dr. Porcher, author of the "Resources of the South," says: "The Creek Indians used a decoction of the cassine at the opening of their councils, *sending to the seacoast for a supply*," and adds that the coast Indians sent it to the far west tribes. How far its use extended northward I can not ascertain. From some allusions of the early French writers I think it was used by the Natchez, and that it was sent up the Mississippi from the coast of Louisiana. The Indians of Wisconsin, Illinois, and westward, used a decoction of willow leaves as a beverage, but I can not find that they used it in ceremonials, or that it was looked upon with the same reverence.

It appears from the accounts of various early writers that there were several methods of preparing the black drink.

(1) The decoction made of the fresh leaves and young branches.

(2) A decoction of the dried and roasted leaves. It is probable that the leaves during roasting developed new qualities, as the roasting of coffee brings out the aromatic odor due to a volatile oil.

(3) A decoction which was allowed to ferment. In this condition it became an alcoholic beverage, capable of causing considerable intoxication, similar to that caused by beer or ale.

McCullough, in his "Researches," seems to be in error when he asserts:

None of the people of Florida appear to have used intoxicating drinks; but they made a hot tea from the leaves of the cassine (*Prinos glaber*), which they poured backwards and forwards until it frothed. This tea may have been slightly stimulant, but it seems to have had no other than a diaphoretic or diuretic effect.

This seems to have been the belief of all the early writers, but I have always doubted it, for if true the North American Indians would stand about alone among races above the lower grade of savagery in their ignorance of alcoholic beverages. The Mexican Indians (Aztecs), the tribes of the Pacific coast and of Central America, all had intoxicating drinks. I admit that there is no proof that the Indians of Canada and of the States north of the Ohio and the Potomac possessed intoxicating beverages, but there is ample proof that the southern Indians brewed from cassine a strong beer.

In my experiments I find that an infusion of cassine leaves with boiling water, after standing till cool, gives a scarcely perceptible taste and slight odor. This infusion, if boiled for half an hour, gives a dark liquid like very strong black tea, of an aromatic odor, *sui generis*, not like coffee, but more like Oolong tea without its pleasant rose odor. The taste is like that of an inferior black tea, quite bitter, but with little delicacy of flavor. It is not an unpleasant beverage, and I can imagine that the palate would become accustomed to it, as to maté, tea, or coffee.

HISTORY.

The early history of the use of *Ilex cassine* as a beverage is lost in the darkness of prehistoric ages. Probably the same can be said of tea, coffee, maté, and cocoa. But it is a singular fact that while all the latter beverages still continue to be used in the countries where they are indigenous, as well as all over the world, the use of cassine is nearly extinct, as it is now only used occasionally in certain important religious ceremonies by the remnants of the Creek Indians, and will disappear with them unless rescued by chemical research and its use revived for hygienic or economical reasons.

The very earliest mention of cassine was made in the "Migration Legend of the Creek Indians." This curious legend has been lately published by A. S. Gatschet, of the Bureau of Ethnology, Washington, D. C., with text, glossaries, etc. In his preface he says: "The migration legend of the Kosihta tribe is one of the most fascinating accounts that has reached us from remote antiquity and is mythical in its first part." This tribe was a part of the Creek Nation. Its chief, Tchikilli, read the legend before Governor Oglethorpe and many British authorities in 1735. It was written in red and black characters (pictographic signs) on a buffalo skin. This was sent to London, and was lost there; but fortunately a text of the narrative was preserved in a German translation.

It begins by narrating that the tribe started from a region variously supposed to be west of the Mississippi, or in southern Illinois, or southern Ohio. They traveled west, then south, then southeast, until they reached eastern Georgia. Here they met a tribe, called in the legend, the "Palachucolas," who gave them "black drink" as a sign of friendship, and said to them, "Our hearts are white, and yours must be white, and you must lay down the bloody tomahawk, and show your bodies as a proof that they shall be white."

This was evidently the first knowledge the Kosihta tribe had of this beverage.

The next mention is by Cabeza de Vaca, who found the Cutalchiches west of the mouth of the Mississippi drinking a tea from the leaves of a tree like an oak. Another narrative says, "Leaves like a plum leaf." It was drunk by men only.

Jean Ribault, the French explorer of east Florida (1666), mentions his first experience in tasting the beverage: "Leur boisson qu'ils appellent *cassinet* se fait d'herbes composées, et m'a semblé de telle couleur que la cervoyce de ce pays; j'en ay gousté et ne l'ay point trouvé fort estrange." (Their drink, which they call *cassinet*, is made of compounded herbs, and seemed to me about the color of French beer. I tasted it and did not find it at all unpleasant.)

Gatschet, in commenting on the mention of cassine in the legend, says:

Black drink was prepared from the small and narrow leaves and the tender shoots of the shrub *Ilex cassine*, which grows spontaneously as far north as the thirty-seventh degree of latitude. The white people of the Carolinas prepared from it a sort of tea. The botanical name formerly given to the plant was *Cassine yaupon*, *yaupon* being a derivative from the Katawba term *yáp* or *yop* plant, tree, or shrub. The name cassine was first applied, as Prof. Lester F. Ward informs me, as a generic name to a South African plant by Linné, and as a species name for an *Ilex* by Thomas Walter. (Dahoon is the name of another *Ilex*; Walter spells it *duhon*, others *houx d'ahon*.) The plant and decoction are called by the Sketimasha, *nu'ut*; by the Creeks, Assi luputski, *small leaves*, which is generally abbreviated to Assi

leaves. The term black drink originated among the British traders. In Ch. C. Jones's "Tomochichi," p. 118, it is called "foskey."

The Creeks made use of the Assi as we use fermented liquors, to promote conviviality; but it entered also into their ceremonies of religion and warfare. But the black-drink potion was not always prepared in the same strength. The ancient Creeks had three modes of preparing it; the three potions resulting from them widely differed in strength according to the uses for which they were intended. Small quantities of the young leaf, parched in a pot until it assumed a brown color, produced a liquor acting as an exhilarant and gentle diuretic; it was drank by the people at the busk, and by the "elders" when assembled in council or when discussing every-day topics. After the potion had been poured from one pan or cooler into another, it begins to ferment and to produce a white froth, from which it is styled also *white drink*, the term "white" alluding simultaneously to its purifying qualities. To make the liquid stronger a larger infusion of the parched leaves is required; it then assumes a dark hue, nearly as black as molasses, and acts as a powerful intoxicating stimulant. A still larger addition of the cassine leaf produces a strong narcotic, which was, as mentioned previously, used by conjurors to evoke prophetic ecstasies accompanied by dreams. The black drink of the weaker sort acts as an emetic,* and was used as such at the annual busk and on other occasions extensively; this gave to the liquid its renown as a bodily and moral purificator, for primitive people are prone to regard agencies which act with mysterious force upon the bodily constitution as symbols for abstract spiritual or religious ideas. This drink being served at all games and festivals, councils, and conclusions of treaties, special ministrants, the Hinihalgi, were appointed for its manufacture by the miko of the town. On festive days they prepared it with peculiar ceremonies and served it to all who attended the celebration in the square. The singing of the yahola, or black-drink note, was, and is still, a peculiar rite connected with the drinking of this favorite liquid.

Narvaez writes (1536) of the Indians on the coast of Texas:

They have a sort of drink made of the leaves of a tree like the mulberry tree, which they boil very well and work it up into a froth, and so drink it as hot as ever they can suffer it to come into their mouths. All the while this is over the fire the vessel must be close shut; and if by chance it should be uncovered, and a woman should come by in the meantime, they would drink none of it, but fling it all away. Likewise, while they stand cooling it and pouring it out to drink, a woman must not stir or move, or they would throw it all to the ground, or spew it up again if they had drunk any; she herself would incur the bastinado. All this time they continue bawling out aloud, "Who will drink?" and when the women begin to hear these exclamations, then it is that they settle themselves in their postures, and were they sitting or standing, though it were a tiptoe, or one leg up and the other down, they must continue so till the men have cooled their liquor and made it fit to drink. The reason of this is every whit as foolish and unreasonable as the custom itself, for they say should not the women stand still when they hear their voice some bad thing would be conveyed into the liquor, which they say would make them die; and if such a generation of asses were all poisoned it were no great loss to the world.

In the narrative of René Loudonnière (1564) he says of his expedition from Fort Caroline, at the mouth of the river of May (St. Johns), Florida:

I departed with fifty of my best soldiers in two barks, and arrived in the dominion of Utina, distant from our fort about 40 or 50 leagues (125 miles); and going ashore we drew near his village, situated 6 leagues from the river, where we took him prisoner. They (his tribe) therefore brought me fish in their little boats, and their meal of mast (maize); they also made their drink which they call cassine, which they sent to Utina and me.

The map in Le Moine's Narrative shows the residence of Utina to be west of the river St. Johns, and in such a position that it is possible that Loudonnière went up the St. Johns to the Ochlawaha River, then up that river to Orange Creek and to Orange Lake, which is of crescent shape, just as it is figured on Le Moine's map. The cassine which Utina's men sent to him must have been obtained from the east or west coast, unless it was the leaves of the *Ilex dahoon*, which grows in the interior of Florida.

* Only when drunk in great quantity.—H.

Le Moine, in his "Narrative," illustrated with drawings and written in 1564, has the following mention of cassine:

I sent a second expedition, with two shallops, having soldiers and sailors aboard, with a pre-ent to be given in my name to the widow of a deceased chief named Hion-acara, who lived about 12 miles north of us. She received my men kindly, and loaded both of these shallops, for me, with maize and nuts; and she sent in addition some baskets of cassina leaves, of which they make a drink.

In another place he describes the proceedings of the original Floridians in deliberating on important affairs; this description is illustrated with a spirited drawing:

The chief and his nobles are accustomed during certain days of the year to meet early every morning for this express purpose in a public place, in which a long bench is constructed, having at the middle of it a projecting part laid with nine round trunks of trees, for the chief's seat. On this he sits by himself for distinction sake; and the rest come to salute him, one at a time, the oldest first, by lifting both hands twice to the height of the head, and saying, "Ha, he, ya, ha, ha." To this the rest answer, "Ha, ha." Each as he completes his salutation, takes his seat on the bench. If any question of importance is to be discussed the chief calls upon his lauas (that is, his priests), and upon the elders, one at a time, to deliver their opinions. They decide upon nothing until they have held a number of councils over it, and they deliberate very sagely before deciding. Meanwhile the chief orders the women to boil some cassine; which is a drink prepared from the leaves from a certain root and which they afterwards pass through a strainer."

The chief and his councillors being now seated in their places, one stands before him, and spreading forth his hands wide open, asks a blessing upon the chief and the others who are to drink. Then the cup-bearer brings the hot drink in a capacious shell, first to the chief, and then, as the chief directs, to the rest in their order, in the same shell. They esteem this drink so highly that no one is allowed to drink it in council unless he has proved himself a brave warrior. Moreover, this drink has the quality of at once throwing into a sweat whoever drinks it. On this account those who can not keep it down, but whose stomachs reject it, are not intrusted with any difficult commission, or any military responsibility, being considered unfit, for they often have to go three or four days without food; but one who can drink this liquor can go for 24 hours afterward without eating or drinking. In military expeditions also, the only supplies which they carry consist of gourd bottles or wooden vessels full of this drink. It strengthens and nourishes the body, and yet does not fly to the head, as we have observed on occasion of these feasts of theirs.

In "The Karankawa Indians, the coast people of Texas," by A. S. Gatschet (Peabody Museum, 1891), Mrs. Oliver, who lived among that tribe, says:

At their principal festival, at the full moon, they assembled in a tent, in the middle of which was a small fire upon which boiled a very strong and black decoction made from the leaves of the youpon tree. From time to time this was stirred with a whisk, till the top was covered thickly with a yellowish froth. This tea, contained in a vessel of clay of their own manufacture, was handed around occasionally and all the Indians drank freely. It was very bitter and said to be intoxicating, but if so, it could only have been when drunk to great excess, as it never seemed to produce any visible effect upon them.

She further mentions a chant, which rose and fell in a melancholy cadence, and occasionally all the Indians joined in the chorus, which was ha-i-yah, ha-i-yah, hai, hai-yah, hai-yah. The first two words were shouted slowly, then a succession of hai-yahs very rapidly uttered in chromatic ascending and descending tones, ending in an abrupt hai! very loud and far reaching. [Compare this with the Creek ceremonies—Adair.]

Gatschet adds a note: "The Texans find it [yopon] in the woods, not on the coast line, and drink a tea or decoction of it with sugar and milk. The white people east of the Mississippi do the same."

In the narrative of the expedition of Dominique de Gourges (1567) to Florida, to revenge the massacre of the Huguenots at St. Augustine, it

is narrated that when he was on a visit to the Chief Satoriona, whose tribe lived in southern Georgia, near the seacoast—

Before leaving there the savages made a beverage, called by them *cassine*, which they are accustomed to take at all times, and when they go to fight in places where there is danger. This beverage, made of a certain plant, and drunk quite hot, keeps them from being hungry or thirsty for 24 hours. They presented it first to Captain Gorges, who pretended to drink it, and swallowed none of it; then Satoriona partook of it, and after him all the others, each one according to his rank.

This assertion that the drink prevents hunger and thirst reminds us of the similar effect of coca leaves used by the Peruvian Indians, and now an official medicine used for the same purpose.

James Adair was an Englishman, who lived 40 years among the Southern Indians (from 1735 to 1775), and whose "History of the American Indians" is invaluable to the antiquarian. It was published in London, A. D. 1775, and is a mine of valuable information. He thus describes the cassine:

There is a species of tea that grows spontaneously and in great plenty along the seacoast of the two Carolinas, Georgia, and east and west Florida, which we call *yopon* or *casseena*. The Indians transplant and are very fond of it. They drink it on certain occasions, and in the most religious ceremonies, with awful invocations; but the women and children and those who have not accompanied their holy ark, *pro aris et focis*, dare not even enter the sacred square when they are on their religious duty.

He says distinctly that the Indians "transplant" the shrub, which means that they cultivated it, and in another place he uses a phrase which implies that they had plantations near to their "temples," or places of worship. Travelers in Paraguay assert that, though attempts have been made by Jesuits and others to cultivate plantations of maté, or Paraguay tea, it has never succeeded under cultivation. Adair is the only author who mentions this transplanting.

In another place Adair says:

The yopon, or casseena, is very plenty [in northwest Florida] as far as the salt air reaches over the lowlands. It is well tasted and very agreeable to those who accustom themselves to use it. Instead of having any noxious quality, according to what many have experienced of the East India insipid and costly tea, it is friendly to the human system, enters into and contests with the peccant humors, and expels them through the various channels of nature. It perfectly cures a tremor of the nerves.

At the time Adair wrote the above, Chinese tea was a rare and expensive luxury in England, and its use was opposed as intensely as was the use of tobacco when it was first introduced. The power ascribed to cassine of curing "tremors" is significant. Adair, in the same paragraph, mentions another leaf used as a beverage, but his description is so indefinite that I am not able to decide as to its botanical name. It is certainly not the *Oeanothus* (New Jersey tea). On referring to Rafinesque, I think this "North America tea" may be the *Viburnum cassinoides*, which, he says, is "also named cassine, and so used." He also says that "*V. levigatum* and *V. prunifolium* are used for the tea in the South."

Adair further says:

The North American tea has a pleasant aromatic taste and the same salubrious property as the casseena. It is an evergreen and grows on hills. The bushes are about a foot high, each of them containing in winter a small, aromatic, red berry in the middle of the stalk. Such I saw it about Christmas, when hunting among the mountains, opposite to the lower Mohawk Castle, in the time of deep snow. There is no visible decay of the leaf, and October seems the proper time to gather it.

He frequently refers to the "sacred uses" of the *black drink*, a decoction of the cassine. I quote his most important allusions:

"There is a carved human statue of wood, to which, however, they pay no religious homage. It belongs to the head war town of the upper Muskogee country, and seems to have been originally designed to perpetuate the memory of some distinguished hero who deserved well of his country, for when this *casseena*, or bitter black drink, is about to be drank in the Synedrion they frequently on common occasions will bring it there and honor it with the first conch shell full, by the hand of the chief religious attendant, and then they return it to its former place. It is observable that the same beloved waiter, or holy attendant, and his coadjutant, equally observe the same ceremony to every person of reputed merit of that quadrangular place.

(Adair seems to have written this book for the sole purpose of proving that the Creeks were one of the lost tribes of Israel. He imagines that in one of their religious festivals they invoke the name of Jehovah under the appellation of Y-O-He-Wah.)

When this beloved liquid, or supposed drink offering, is fully prepared and fit to be drank, one of the magi brings two old, consecrated, large conch shells out of a place appropriate for containing the holy things, and delivers them into the hands of two religious attendants, who, after a wild ceremony, fill them with the supposed sanctifying bitter liquid; then they approach near to the two central red and white seats (which the leaders call the war and beloved cabins), stooping with their heads and bodies pretty low. Advancing a few steps in this posture, they carry their shells with both hands, at an instant, to one of the most principal men on those red and white seats, saying in a bass key, Yah, quite short; then in like manner they retreat backwards, facing each other with their heads bowing forward, their arms across rather below their breasts and their eyes half shut. Thus in a very grave, solemn manner they sing on a strong bass key the awful monosyllable O for the space of a minute; then they strike up a majestic He on the treble, with a very intent voice, as long as their breath allows them, and on a bass key, with a bold voice and short accent, they at last utter the strong, mysterious accent Wah, and thus finish the great song, or most solemn invocation of the divine essence. The notes together compose the sacred, mysterious name, Y-O-He-Wah. The favored persons, whom the religious attendants are invoking the divine essence to bless, hold up their shells with both hands to their mouths during the awful sacred invocation, and retain a mouthful of the drink to spurt out upon the ground as a supposed drink offering to the great self-existing giver, which they offer at the end of their draft. If any of the traders who at those times are invited to drink with them were to neglect this religious observance they would reckon us as godless and wild as the wolves of the desert. After the same manner the supposed holy waiters proceed, from the highest to the lowest, in their Synedrion, and when they have ended that awful solemnity they go round the whole square, or quadrangular place, and collect tobacco from the sanctified sinners, according to ancient customs: "For they who serve at the altar must live by the altar."

In another place (page 106), in describing at great length one of the religious festivals of the Creeks, Adair says: "He" [the Arch Magnus, or fire-maker,] "consecrates the button-snake root and casseena by pouring a little of those two strong decoctions into the pretended holy fire. He then purifies the red and white seats with those bitter liquids and sits down."

This leads me to observe that the sacred "black drink" was not made of the cassine alone, but sometimes of several bitter and aromatic roots and leaves. Mrs. A. E. W. Robertson, in a letter from Okmulgee, Ind. T., writes: "The black drink as now prepared is, I think, made from three plants, the "Passa," (Pasa) or Button Snakeroot (*Eryngium aquaticum*), and the Mekko Hoyonee v. (*Micco-Hoyonvicha*), a small willow, and the third I do not now recall." It may be that cassine is not now used at all by the Creeks in Indian Territory, for it does not grow there, and if used would have to be imported from the Atlantic or Gulf coast.

Bossu, who traveled through the country now known as Louisiana, Mississippi, Alabama, and Georgia, in 1751, makes no mention of the

use of cassine by the Indians of the two first-named States (Natchez), nor by the Indians along the Mississippi as far as he traveled, namely, to the country of the Illinois. But in his travels eastward, when he was in the neighborhood of Mobile, he writes:

All the Allibamas drink the cassine.* This is the leaf of a little tree which is very shady; the leaf is about the size of a farthing, but dentated on its margins. They toast these leaves as we do coffee, and drink the infusion of them with great ceremony. When this diuretic potion is prepared, the young people go to present it, in calabashes formed into cups, to the chiefs and warriors, that is, the honorables, and afterwards to the other warriors, according to their rank and degree. The same order is preserved when they present the calumet to smoke out of. Whilst you drink, they howl as loud as they can and diminish the sound gradually. When you have ceased drinking they take their breath, and when you drink again they set up their howls again. These sorts of orgies sometimes last from 6 in the morning to 2 o'clock in the afternoon. The Indians find no inconvenience from this potion, to which they attribute many virtues, and return it without any effort. The women never drink of this beverage, which is only made for the warriors.

What Bossu says relating to the size of the leaves shows conclusively that it was the leaf of the tree *Ilex cassine*, for one of the leaves is just the diameter of the English farthing, a coin the size of the old half cent of American currency. His phrase "return it without any effort" is rather ambiguous, but it probably refers to the expulsion of the decoction after having drenched their stomachs with it. I do not think this was a true emesis, for there is no proof that it was an emetic. The Indians doubtless swallowed such large quantities that it was regurgitated without effort.

Bossu's only other reference to the cassine is when, in describing a council between the French and the Allibamas, he writes:

The Chevalier de Emville held a speech to the assembly in his turn, and made the nation a present which the governor had sent him. The Indians gave him the great calumet of peace to smoke; all the soldiers and French inhabitants likewise smoked it, in sign of a general amnesty. Afterwards they drank the cassine, which is the potion of the white word, *i. e.*, the potion of oblivion and peace.

Bernard Romans, "Natural History of Florida" (1775), page 94, writes as follows:

The *cassine* is used by them (the Creeks) as a drink; they barbecue or toast the leaves and make a strong decoction of them; then men only are permitted to drink this liquor, to which they attribute many virtues. It is made so strong as to be black and raise a froth. When they drink it at their assemblies in the square they call it black drink.

Romans states (p. 96) that it was the business of the women to "prepare the cassine drink." These are his only allusions to cassine.

William Bartram, in his "Travels in Florida" (1792), one of the most fascinating books ever written, narrates that he attended a "feast" given by the "White king of Talahafochta," near the River "Appalachuchla" (Apalachicola), and says:

When the feast was over, * * * our chief, with the rest of the white people in town, took their seats according to order; tobacco and pipes were brought; the calumet was lighted and smoked, circulating according to the usual forms and ceremony; and afterwards *black drink* concluded the feast. The king conversed, drank *cassine*, and associated familiarly with his people and with us. (P. 234.)

Again, when in what is now Georgia, or extreme north Florida, meeting the Creek Indians at a town he calls "Attasse," he attended a great council of the chiefs of that nation:

I was introduced to the ancient chiefs at the public square or areopagus; and in the evening in company with the traders, who are numerous in this town, repaired

* This is the *Prinus glaber* of Linnaeus sp. pl. p. 471 and *Casseea vera* Florida-norum, Catesby's Carolinas, 2 t. 57.

to the great rotunda, where were assembled the greatest number of ancient, venerable chiefs and warriors that I had ever beheld; we spent the evening and greater part of the night together in drinking cassine and smoking tobacco. The great council house, or rotunda, is appropriated to much the same purpose as the public square, but more private, and seems particularly dedicated to political affairs; women and youth are never admitted, and I suppose it is death for a female to presume to enter the door or approach within its pale. It is a vast conical building of circular dome, capable of accommodating many hundred people; constructed and furnished within exactly in the same manner as those of the Cherokees already described, but much larger than any I had seen of them; there are people appointed to take care of it, to have it daily swept clean, and to provide canes for fuel or to give light. As their vigils and manner of conducting their vespers and mystical fire in this rotunda are extremely singular, and altogether different from the customs and usages of any other people, I shall proceed to describe them. In the first place, the governor or officer who has the management of this business, with his servants attending, orders the black drink to be brewed, which is a decoction or infusion of the leaves and tender shoots of the *cassine*; this is done under an open shed or pavilion, at 20 or 30 yards distance, directly opposite the door of the council house. Next he orders bundles of dry canes to be brought in; these are previously split and broken in pieces to about the length of 2 feet, and then placed obliquely crossways upon one another on the floor, forming a spiral circle round about the great center pillar, rising to a foot or 13 inches in height from the ground; and this circle, spreading as it proceeds round and round, often repeated from right to left, every revolution increases its diameter, and it at length extends to the distance of 10 or 12 feet from the center, more or less, according to the length of time the assembly or meeting is to continue. By the time these preparations are accomplished, it is night, and the assembly have taken their seats in order. The exterior extremity or outer end of the spiral circle takes fire and immediately rises into a bright flame (but how this is effected I did not plainly apprehend; I saw no person set fire to it; there might have been fire left on the earth; however, I neither saw nor smelt fire or smoke until the blaze instantly ascended upwards), which gradually and slowly creeps round the center pillar, with the course of the fire, feeding on the dry canes, and affords a cheerful, gentle, and sufficient light until the circle is consumed, when the council breaks up.

Soon after this illumination takes place the aged chiefs and warriors are seated on their cabins or sofas, on the side of the house opposite the door, in three classes or ranks, rising a little one above or behind the other; and the white people and red people of confederate towns in like order on the left hand, a transverse range of pillars, supporting a thin clay wall about breast high, separating them; the king's cabin or seat is in front; the next to the back of it the head warriors', and the third or last accommodates the young warriors, etc.

The great war chief's seat or place is in the same cabin with and immediately to the left hand of the king and next to the white people; and to the right hand of the mico or king the most venerable headmen and warriors are seated. The assembly being now seated in order, and the house illuminated, two middle-aged men, who perform the office of slaves or servants *pro tempore*, come in together at the door, each having very large conch shells full of black drink, and advance with slow, uniform, and steady steps, their eyes or countenance lifted up, singing very low but sweetly; they come within 6 or 8 paces of the king's and white people's cabin, when they stop together, and each rests his shell on a tripod or little table, but presently takes it up again, and bowing very low, advances obsequiously, crossing or intersecting each other about midway; he who rested his shell before the white people now stands before the king, and the other, who stopped before the king, stands before the white people, when each presents his shell, one to the king and the other to the chief of the white people; and as soon as he raises it to his mouth, the slave utters or sings two notes, each of which continues as long as he has breath, and as long as these notes continue so long must the person drink, or at least keep the shell to his mouth. These two long notes are very solemn, and at once strike the imagination with a religious awe or homage to the Supreme, sounding somewhat like a hoo-ohah and a he-yah. After this manner the whole assembly are treated as long as the drink or light continues to hold out; and as soon as the drinking begins, tobacco and pipes are brought.

Mark Catesby (*Hortus americanus*, 1763) describes the *Ilex cassine* as follows:

This shrub usually rises from the ground with several stems to the height of 12 feet, shooting into many upright, slender, stiff branches, covered with a whitish, smooth bark, and set alternately with small evergreen serrated leaves, resembling those of the Aleternus; its flowers are small and white, and grow promiscuously among the leaves, and are succeeded by small spherical berries on short footstalks.

These berries turn red in October and remain so all winter, whereby with the green leaves and white bark they produce an elegant appearance.

But the esteem the American Indians have for this shrub, from the great use they make of it, renders it most worthy of notice. They say its virtues have been known amongst them from the earliest times, and they have long used it in the same manner as they do at present. They prepare the leaves for keeping by drying or rather parching them in a pottage pot over a slow fire, and a strong decoction of the leaves thus cured is their beloved liquor, of which they drink large quantities, both for health and pleasure, without sugar or other mixture. They drink it down and disgorge it with ease, repeating it very often, and swallowing many quarts. They say it restores lost appetite, strengthens the stomach, and confirms their health, giving them agility and courage in war. It grows chiefly in the maritime parts of the country, but not farther north than the capes of Virginia.

The Indians on the seacoast supply those of the mountains therewith, and carry on a considerable trade with it in Florida, just as the Spaniards do with their South Sea tea from Paraguay to Buenos Ayres. Now, Florida being in the same latitude north as Paraguay is south, and no apparent difference being found on comparing the leaves of these two plants together, it is not improbable they may be both the same.

In South Carolina it is called cassena, in Virginia and North Carolina it is known by the name of yopon; in the latter of which places it is as much in use amongst the white people as among the Indians, and especially among those who inhabit the seacoast.

This plant is raised from the seeds, which lie 2 years in the ground before it appears; it grows plentifully on many of the sand banks on the seashore of Carolina.

In that rare and quaint narrative of Jonathan Dickenson (1790), "who was shipwrecked on the southeast coast of Florida among the savage cannibals," he states that when a short distance south of the "village of Sta. Lucca" (St. Lucia), and among the Indians and at the "house of the Cassekey," he heard often a strange noise in another part of the house which he could not account for. The following quotation is interesting; it shows that cassine grows on the extreme south coast of Florida, and gives the method of preparing the black drink among those barbarous nations:

In one part of this house where the fire was kept was an Indian man having a pot on the fire wherein he was making a drink of the leaves of a shrub (which we understood afterward by the Spaniard is called cassena), boiling the said leaves after they had parched them in a pot; then with a gourd having a long neck and at the top of it a small hole which the top of one's finger could cover and at the side of it a round hole of 2 inches diameter, they take the liquor out of the pot and put it in a deep round bowl, which being almost filled containeth nigh 3 gallons. With this gourd they brew the liquor and make it froth very much; it looketh of a deep brown color. In the brewing of this liquor was this noise made which we thought strange, for the pressing of the gourd gently down into the liquor and the air which it contained being forced out of the little hole at top occasioned a sound, and according to the time and motion given would be various, this drink, when made and cooled to snp, was in a shell first carried to the Cassekey, who threw part of it on the ground and the rest he drank up, and then would make a loud *hem*, and afterwards the cup passed to the rest of the Cassekey's associates as aforesaid, but no other man, woman, or child must touch or taste of this sort of drink, of which they sat sipping, chattering, and smoking tobacco, or some other herb instead thereof, for the most part of the day.

In a letter from William Baldwin, a noted naturalist and surgeon in the U. S. Navy, written from St. Marys, Fla. (6 miles from Fernandina), in 1816, he mentions finding the *Ilex prinoides* predominant on the sandy, shrubby plains of the vicinity:

Its common height is about 6 or 8 feet, and at this season (December), with its ripe crimson-colored fruit, makes a fine appearance. The berry of this species is considerably larger than that of any other I have seen, and is not unpleasant to the taste, possessing an agreeable sweet, along with a slight bitter. I have eaten freely of it with entire impunity.

He discusses the question whether the genus *Prinos* should not be merged into that of *Ilex*. They are so near alike that their leaves doubtless possess similar properties, and are probably mixed with cassine.

Collinson, in a letter from London, England, to John Bartram, 1739, makes mention of "the yupon of Virginia, or cassena of Carolina" (*Ilex cassena* or *I. vomitoria*). The Indians drive a great trade with the berries (?) to make tea with to the Gulf of Mexico. It grows nowhere to the northward of that island they found it on, which belongs to Col. Custis. I have it in my garden. (He errs as to the berries being used, but proves that it can be cultivated.)

Dr. Fothergill cultivated it together with maté in his botanical garden in London in 1784. (See his Memoirs.)

John Lee Williams, in his history of east and west Florida, 1837, a work unique in character and of special value to historians, contains but one mention of the "black drink." It is in a mention of Oseola, a noted chief of the Seminoles. In writing of his parentage, he says:

Powell, or Oseola, is a native Red Stick; who his father was is unknown, but it is said that his mother was at one time connected with an Englishman of the name of Powell. We are informed by a respectable Creek chief that his name is As-sin Yahole, "Singer at the black drink."

Now this word As-sin is a variation of cassine, and Oseola was probably one of those whose duty it was to sing during the ceremonies which accompanied the drinking of cassine.

It is strange that the cassine has not been celebrated in poetry or song. The songs of the Creeks have not been preserved. Perhaps they sung the praises of the "black drink." The only mention I find in poetry is an allusion to it as "the tough cassine," in the poems of Mrs. Sigourney, when she enumerates the variety and qualities of the trees of America.

C. C. Jones, in his "Antiquities of the Southern Indians," writes (page 11): "The black drink was a decoction of the leaves and tender twigs of the cassine, or *Ilex yupon*." He mentions no other ingredients, but other observers claim that the *Iris versicolor* (blue flag) and sometimes the *Lobelia inflata* were used. My opinion is that, when used in their wars or religious festivals, other ingredients were used, for it is represented as powerfully purgative and emetic. Yet, on the other hand, we are told that the two species of *Ilex cassine* and *dahoon* possess these qualities. The *I. cassine* is called by some botanists *Ilex vomitoria*. On social occasions the black drink was probably made of the leaves of the cassine alone, or made much weaker. Jones writes:

The Mico councillors or warriors meet every day in the public square, sit and drink acee (assi), a strong decoction of the cassine yupon, called by traders black drink, talk of the news, the public and domestic concerns, etc. They have a regular ceremony for making as well as delivering the acee to all who attend the square.

The black drink made by the Seminoles is described as "nauseous to the smell and taste, and emetic and purgative." It is a mixture and not brewed of the cassine alone. All our beverages, such as tea, coffee, maté, and even chocolate, when drunk very strong are capable of causing diuresis, purging, and vomiting.

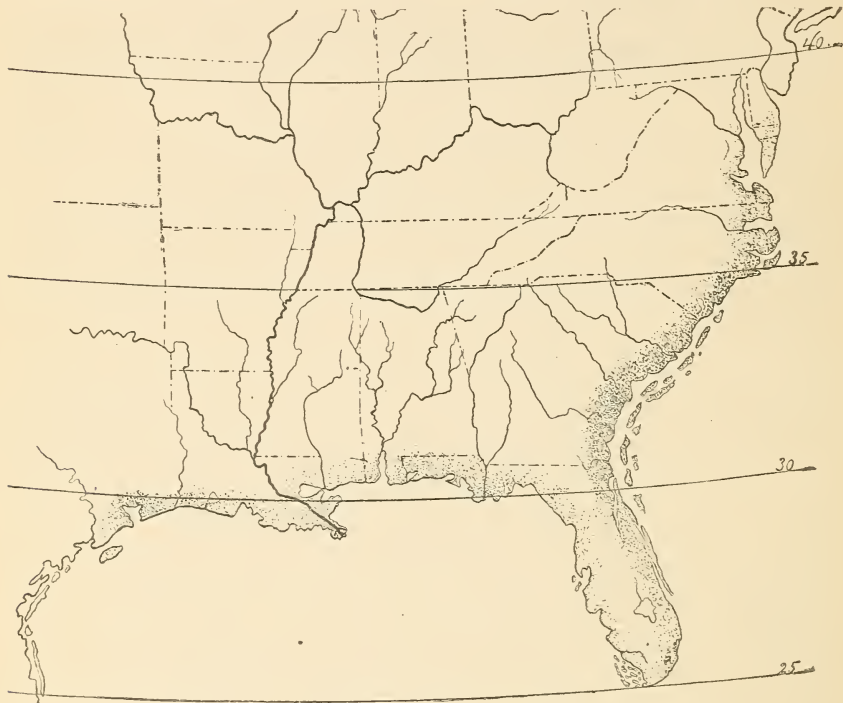
One peculiarity of the drinking of the black drink is that, so far as I can ascertain, it was not used at their meals as we use tea and coffee, but wholly as a social beverage or at festivals and other public occasions. I do not think the women were allowed to drink it, at least not publicly. Authorities differ on this point.

Among the Creeks the women sometimes prepared the black drink, but Narvaez writes that the Indians on the coast of what is now Texas did not allow a woman to come near it during its preparation.

That a beverage containing caffeine should fall into disuse and become almost forgotten is a singular fact. The use of maté has not de-

creased from the time of the conquest of South America by Europeans. The reason why the latter is still in use and the former not lies, perhaps, in the fact that the Europeans in South America mixed with the natives, married, and adopted their customs, while the English and French who settled the Gulf States did not associate with the Indians, and adhered to the use of Chinese tea. Now that we know that the leaf of the cassine contains caffeine or theine, can its use as a beverage be revived?

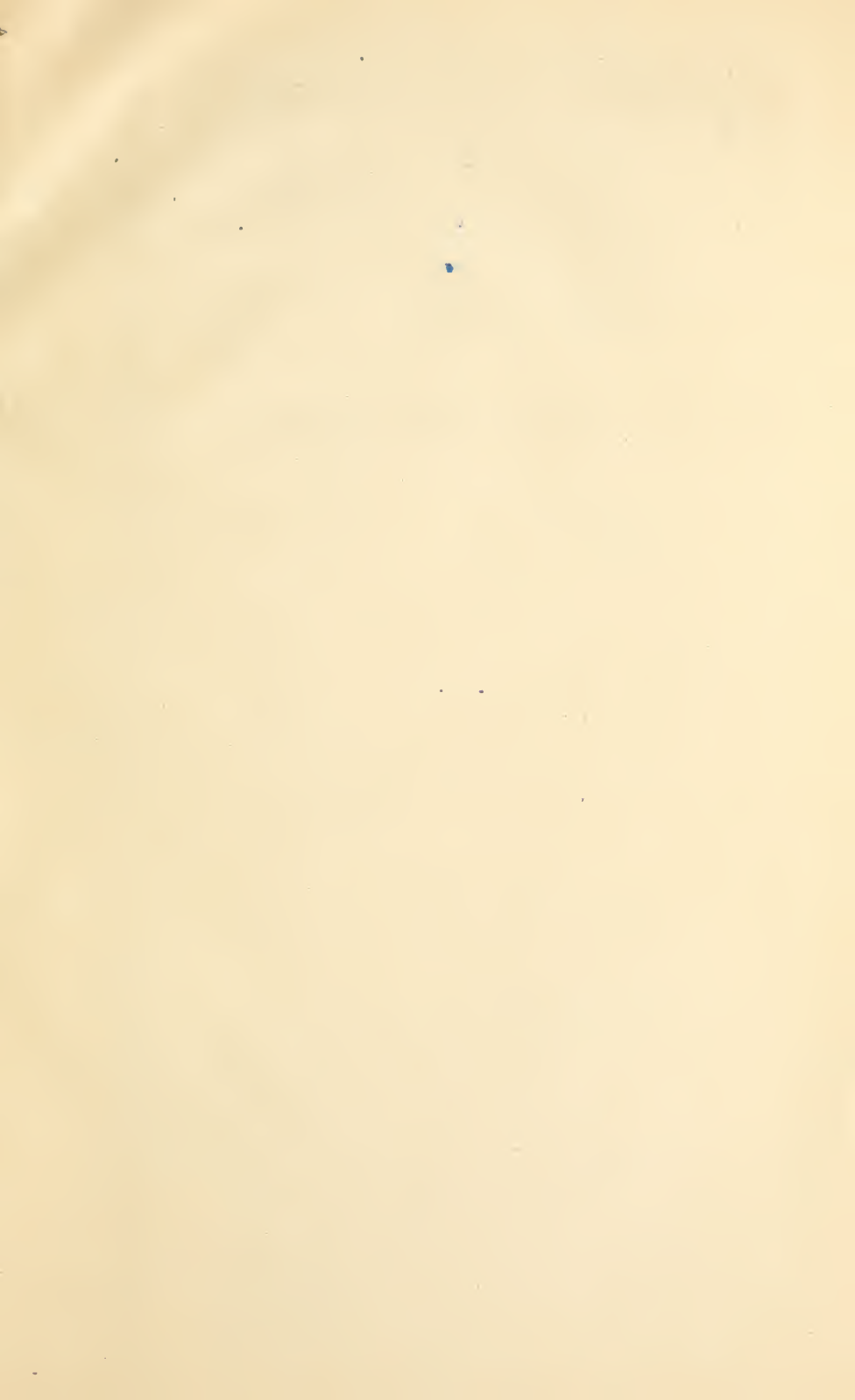
It is not as pleasant in odor and taste as *Thea sinensis*, and this may be against it; on the other hand, it seems to have some salutary properties which the latter does not possess, and may, perhaps, be far more cheaply obtained.



Distribution of the *Ilex cassine*, indicated by dotted portions along coast line.

A rough estimate can be made as to the number of square miles upon which it grows. Estimating the coast line from the James River, in Virginia, to the Rio Grande, in Texas—about 2,000 miles—and multiplying this by 20 miles, the extent of its growth inland, we get a total of about 40,000 square miles. On this area could be picked an immense quantity of the leaves, and if the trees are not destroyed in the picking the crops could be harvested every year. No estimate can be approximated even of the amount of the crop of leaves which could be gathered, because we can not estimate the number of trees on this area.

It would seem possible that further inquiries on this point and careful experiments in cultivation and manipulation might result in furnishing our market with a product which would be found in many cases an acceptable and useful substitute for the more expensive imported teas.





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